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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,144

05/03/2006

Tatsuo Hara

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GLOBAL IP COUNSELORS, LLP
1233 20TH STREET, NW, SUITE 700
WASHINGTON, DC 20036-2680

EXAMINER

MISKA, VIT W

ART UNIT

PAPER NUMBER

2833

MAIL DATE

DELIVERY MODE

07/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,144	Applicant(s) HARA ET AL.	
	Examiner Vit W. Miska	Art Unit 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/3/2006, 1/11/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of Group I (claims 1-23) in the reply filed on 4/8/2008 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent to Moteki et al (2001/0030908) in view of EP 1,352,978 (Hwang et al).
3. With respect to claim 1, the Moteki reference teaches the use of a spring 31 as a driving source for a timepiece display 13-14, the spring made of materials having low Young's modulus and high tensile strength (Par. 0021, line 3). The reference does not disclose the titanium alloy material claimed for the spring.
4. Hwang et al teach a high strength titanium alloy for use in springs (Par. 0003, line 5) and wristwatch components (Par. 0002, line 8, Par. 0150, lines 2-3). The

reference further discloses a titanium alloy containing 30-60% Va group elements in the proportions claimed in claim 1, see Par. 0063, line 3.

5. In view of the desirability of a high tensile strength ($>1000\text{MPa}$) and low Young's modulus ($<100\text{GPa}$) characteristics of a spring to achieve desirable elastic deformation and elastic strength, as described at Par. 0061 of Hwang et al, and the suggestion by Hwang et al at Par. 0150, lines 2-3 that the alloy may be used as timepiece component and as a spring, one of ordinary skill in the art would consider the titanium alloy disclosed therein for use as a spring in a timepiece power source of the type disclosed by Moteki et al. Thus, it would have been obvious for one of ordinary skill in the art to make the barrel spring 31 in Moteki et al of the titanium alloy disclosed by Hwang et al, as an alternative material for achieving the desired elasticity and strength characteristics of the spring.

With respect to claims 2-7, 18, 19 and 20 Moteki et al further disclose wherein said spring has a circular cross section with a diameter of 0.05 mm or greater (Par 0047, line 3), wherein said spring has a rectangular cross section with a thickness of 0.01 mm or greater and a width of 0.05 mm or greater (Par. 0047, line 4), wherein said spring is made of nonmagnetic material (Par. 0045, line 3), wherein said spring is a mainspring whose freely spread-out shape is an S shape (claim 2 of reference), wherein said spring has an inner end at an end of a winding side, and an outer end at the other end, and said S shape has an inflection point at which a curving direction changes and

which is formed farther inward than a midpoint between said inner end and said outer end, (see claim 3 of reference), wherein said power source has a barrel stem 33 to which said inner end is fixed, a barrel gear 32 to which said outer end is fixed, and a power generator 20 having a rotor 12 that is rotatably driven in conjunction with said barrel gear, wherein said spring is configured from a single plate or from a laminated plate wherein a plurality of titanium alloy plate-shaped members are laminated and integrated (this feature being an option as noted at Par. 0075, line 3-6), and wherein two springs are provided (Par. 0133, line 4).

6. With respect to claims 8-17 and 21-23, Hwang et al further disclose wherein said titanium alloy contains 20 to 80 mass% of said vanadium group elements per a total of 100 mass% of said titanium alloy (see claim 2 of reference), wherein said titanium alloy contains 30 to 60 mass% of said vanadium group elements per a total of 100 mass% of said titanium alloy (see claim 2) wherein said titanium alloy contains one or more metal elements from the group consisting of zirconium Zr, hafnium Hf, and scandium Sc, (see claim 4), wherein said titanium alloy contains 2 mass% or less of one or more of the elements oxygen O, carbon C, and nitrogen N per a total of 100 mass% of said titanium alloy (see claims 9-11), said titanium alloy contains 2 mass% or less of boron B per a total of 100 mass% of said titanium alloy (see claim 12), wherein said titanium alloy contains one or more metal elements from the group consisting of chromium Cr, molybdenum Mo, manganese Mn, iron Fe, cobalt Co, nickel Ni, tin Sn, and aluminum Al (see claim 6), wherein said average Young's modulus is 60 GPa or

less, and said tensile strength is 1000 MPa or greater (see Tables 1 and 2 following Par. 0175).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vit W. Miska whose telephone number is 571-272-2108. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on 571-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vit W. Miska/
Primary Examiner, Art Unit 2833

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